Paper No. 14

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Ex parte SHUICHI WADA

Appeal No. 2001-2278
Application No. 09/304,267

ON BRIEF

Before ABRAMS, McQUADE and NASE, Administrative Patent Judges.

McQUADE, Administrative Patent Judge.

DECISION ON APPEAL

Shuichi Wada appeals from the final rejection of claims 1 and 3. Claims 2 and 4 through 14, the only other claims pending in the application, stand withdrawn from consideration pursuant to 37 CFR § 1.142(b).

THE INVENTION

The subject matter on appeal relates to "catalyst deterioration detecting apparatus for an internal combustion engine which can detect deterioration of the catalytic converter with enhanced reliability and accuracy by detecting accurately

the temperature-rise state of the catalyst and increasing the frequency of the chance for the catalyst deterioration decision" (specification, page 1). Claim 1 reads as follows:

1. A catalyst deterioration detecting apparatus for an internal combustion engine, comprising:

an engine load detector operable to arithmetically determine parameter values corresponding to load states of an internal combustion engine;

an accumulator operable to arithmetically determine an accumulated value by accumulating counter values corresponding to said parameter values;

a first comparator operable to compare said accumulated value with a first predetermined value corresponding to an operative temperature of a catalytic converter; and

a catalyst deterioration determiner operable to determine a deterioration of said catalytic converter when said accumulated value attains or exceeds said first predetermined value.

THE PRIOR ART

The reference relied on by the examiner to support the final rejection is:

Yamashita et al. (Yamashita) 5,727,383 March 17, 1998

THE REJECTION

Claims 1 and 3 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Yamashita.

Attention is directed to the appellant's main and reply briefs (Paper Nos. 10 and 12) and to the examiner's answer (Paper

No. 11) for the respective positions of the appellant and the examiner with regard to the merits of this rejection.[1]

DISCUSSION

I. Grouping of claims

On page 4 in the main brief, the appellant states that "[c]laims 1 and 3 stand or fall together." In accordance with this statement, and pursuant to 37 CFR § 1.192(c)(7), we will decide the appeal on the basis of claim 1 alone. Claim 3, which depends from claim 1, shall stand or fall therewith.

II. The merits

Yamashita discloses an "apparatus for detecting a deterioration of a catalyst disposed in an exhaust system of an internal combustion engine" (column 1, lines 10 through 12). The description of the apparatus at column 9, line 52, through column 10, line 22, and the depiction thereof in Figures 6 and 7 form the factual basis for the examiner's finding of anticipation. The description reads as follows:

> In carrying out the routine for determining the deterioration of the three-way catalytic converter 13 in FIG. 6, the CPU 32 first checks in step 501 to see if the catalyst activation flag XCATACT has changed

[1] In the final rejection (Paper No. 8), claims 1 and 3 also stood rejected under 35 U.S.C. § 102(b) as being anticipated by Japanese reference 6-264725 to Takada. Upon reconsideration (see page 3 in the answer), the examiner has since withdrawn this rejection.

> from "0" to "1." If the flag is found to have changed from "0" to "1," step 502 is reached. In step 502, the CPU 32 sets the accumulated intake air quantity QASUM to "QACLO" and stores it. The accumulated intake air quantity QASUM is an accumulation of the intake air quantity QA calculated since the start-up of the engine. The calculation is performed by an accumulated intake air quantity calculating routine shown in FIG. 7. In carrying out the routine of FIG. 7, the CPU 32 checks in step 601 to see if the engine is started illustratively by turning on the ignition key. If the engine is found to be started (ignition key=ON), step 602 is reached. In step 602, the CPU 32 updates the accumulated intake air quantity QASUM by adding to the current quantity QASUM the intake air quantity QA calculated on the basis of the readings from the air flow meter 28. Although the first embodiment calculates the intake air quantity QA based on the readings of the air flow meter 28, this is not limitative of the invention. Alternatively, the intake air quantity QA may be estimated from the intake air pressure PM detected by the intake air pressure sensor and from the engine rotational speed Ne measured by the rotational speed sensor 25. The accumulated intake air quantity QASUM is initialized to "0" at the start-up of the engine.
>
> With the accumulated intake air quantity QASUM stored in step 502, the CPU 32 goes to step 503 in which a check is made to see of the value "QACLO" exceeds a predetermined deterioration reference value QACDT. If QACLO $\leq$ QACDT, the CPU 32 terminates this routine immediately. If QACLO > QACDT, the CPU 32 enters step 504 in which the catalyst deterioration flag XCATDT is set to "1." In step 505, the CPU 32 stores the deterioration information into the backup RAM 35 and executes a predetermined diagnostic process (e.g., illumination of the diagnostic lamp 29).

In applying Yamashita against the appealed claims, the examiner says of the foregoing disclosure that "[e]lements corresponding to the engine load detector (column 10, lines 3-5), accumulator (column 9, lines 61-62), comparator (column 10, lines 12-15) and catalyst deterioration determiner (column 10, lines

17-22) as claimed are included" (answer, page 2). In other words, the examiner considers the claim limitations relating to the "engine load detector" to be met by Yamashita's disclosure that "the first embodiment calculates the intake air quantity QA based on the readings of the air flow meter 28," the claim limitations relating to the "accumulator" to be met by Yamashita's disclosure that "the [QASUM] calculation [by CPU 32] is performed by an accumulated intake air quantity calculating routine shown in FIG. 7," the claim limitations relating to the "first comparator" to be met by Yamashita's disclosure that "[w]ith the accumulated intake air quantity QASUM stored in step 502, the CPU 32 goes to step 503 in which a check is made to see if the value 'QACLO' exceeds a predetermined deterioration reference value QACDT," and the claim limitations relating to the "catalyst deterioration determiner" to be met by Yamashita's disclosure that "[i]f QACLO > QACDT, the CPU 32 enters step 504 in which the catalyst deterioration flag XCATDT is set to '1'. In step 505, the CPU 32 stores the deterioration information into the backup RAM 35 and executes a predetermined diagnostic process (e.g., illumination of the diagnostic lamp 29)."

As framed by the appellant, the dispositive issue with respect to the examiner's rejection is whether Yamashita responds to the relationship set forth in claim 1 between the "parameter values" which are arithmetically determined by the engine load

detector as corresponding to load states of the engine and the "counter values" which correspond to the parameter values and are accumulated by the accumulator to arithmetically determine an accumulated value. In essence, the appellant contends that by setting counter values that correspond to the load parameters and accumulating the counter values, the claimed invention affords several advantages over, and presumably differs from, the prior art system disclosed by Yamashita wherein, according to the appellant, the detected values from the load detection means are directly accumulated. The examiner responds that due to the breadth of the appealed claims "[t]he term 'counter values' embraces the intake air quantity values QA determined by Yamashita" (answer, page 4).

While it may be true as urged by the appellant that Yamashita's parameter values, intake air quantities QA, are accumulated by Yamashita's accumulator to arithmetically determine an accumulated value, QASUM or QACLO, it is not apparent, nor has the appellant cogently explained, why these parameter values QA, when accumulated by the accumulator to arithmetically determine the accumulated value QASUM or QACLO, are not "counter values" to the extent broadly required by claim 1. The claim simply does not differentiate the parameter values and the counter values defined therein so as to distinguish over the above noted disclosure by Yamashita. The breadth of claim 1

in this regard is manifested by the examiner's undisputed observation, amply supported by the record, that the claim limitations at issue read on the embodiment described in the appellant's specification wherein

> [t]he engine load detecting means 31 fetches the intake air quantity signal Qa supplied from the air-flow sensor 6 to thereby output the very intake air quantity Qa as the parameter value which corresponds to the engine load.
>
> In this conjunction, it should be mentioned that the accumulating means 32 may use the intake air quantity Qa itself intactly as a counter value corresponding to the parameter value.
>
> . . .
>
> . . . the engine load detecting means 31 outputs the intake air quantity signal Qa as the parameter value corresponding to the engine load, while the accumulating means 32 accumulates the intake air quantities Qa as the counter values to arithmetically determine the accumulated value $\sum$Q [specification, page 21].

Thus, the appellant's position that the examiner's finding of anticipation is unsound is not persuasive. We shall therefore sustain the standing 35 U.S.C. § 102(b) rejection of claim 1, and claim 3 which stands or falls therewith, as being anticipated by Yamashita.

SUMMARY

The decision of the examiner to reject claims 1 and 3 is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED

NEAL E. ABRAMS Administrative Patent Judge	)
JOHN P. McQUADE Administrative Patent Judge	) BOARD OF PATENT APPEALS AND INTERFERENCES
JEFFREY V. NASE Administrative Patent Judge	)

JPM/gjh

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